

عنوان مقاله:

The analysis of stability of the dome-shaped structures under the load concentrated at the tip of the dome and the uniform pressure exerted on the outer surface of the dome

محل انتشار:

کنفرانس بین المللی پژوهش در علوم و تکنولوژی (سال: 1394)

تعداد صفحات اصل مقاله: 10

نویسنده:

Arash yousefi - Structural graduate student, School of Civil Engineering, University of Bojnord

خلاصه مقاله:

One of the most prominent structural designs which have been long considered especially in the construction of the mosques, and cultural centers is the dome-shaped shell structures. Stability and durability of these structures over the centuries has made these structures distinctive from other structures. So that even now, using architectural dome geometry design has its special place, the only difference is that these structures were traditionally made by building materials such as clay and mud. But today, due to technological advances, new material is used in the construction of such structures. In this paper, the critical buckling load of dome-shaped structures for different sectors of a sphere that has the same circular cross section with a hypothetical diameter of 10 m are compared. The samples are modeled by Abaqus software which consists of 2 loading models. In the first one the load is concentrated at the tip of the dome and in the second case; a uniform pressure is applied to the dome surface. Static analysis is performed. The results were reviewed and compared, in general it can be concluded that due to its unique geometry the dome has high and weak compressive strength, also the best geometric shape of the dome from stability and the amount of stress and strain and minimum displacement is 90 degrees

کلمات کلیدی:

Domed ceilings, Load of crisis, Buckling stability, Abaqus

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/446619>

